

BASAL CELL CARCINOMA IN OUR POPULATION: A STUDY OF 21 YEARS EXPERIENCE

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ABSTRACT

OBJECTIVES: To find out common sites of involvement of Basal Cell Carcinoma (BCC) on face, its age and sex predominance and to compare the cosmetic results with different surgical procedures.

SETTING: Liaquat University Hospital Jamshoro, Sindh. Study period was from May 1980 to December 2001.

METHODS: This retrospective study included 333 patients with BCC. All these patients were divided into groups and were offered different treatment modalities. Biopsies of all operated cases were also taken.

RESULTS: Commonest age group with BCC was between 50 and 70 years. Males were more affected than females. Surgery was carried out on 209 (62.76%) cases and radiotherapy in 98 (29.42%) cases. Twenty six (7.80%) patients could not get any therapy.

CONCLUSION: Nose is the commonest site of basal cell carcinoma in our set up. Cosmetically local flaps are superior than full thick and partial thickness grafts regarding colour and texture match.

KEY WORDS: *Carcinoma, Basal Cell, Nose, Surgery, Radiotherapy, Local Flaps*

INTRODUCTION

Basal cell carcinoma (BCC) is the commonest tumour of the skin. It arises from the basal layer of epidermis or from external root sheath. It is common in Caucasians due to less pigment and Fair skin.¹ Face is mostly involved due to sun exposure with 93% of BCC occurring in head and neck region while remaining 7% are found on the trunk and extremities.² Various surgical and non-surgical methods of treatment are available. The surgical methods include curettage and dissection, surgical excision, cryotherapy, Moh's fresh frozen section technique.³ The non-surgical methods include radiotherapy, local 5-flurouracil creams, cytokines that is interleukin-4, IL-7, granulocyte monocyte colony stimulating factor (GM-CSF), INF- alpha (interferon) and TNF- alpha (Tumor necrotic) factor.⁴

Small lesions of less than 1cm are generally excised and closed directly, while 1-4cm basal cell carcinomas are managed preferably with local flaps after excision. Basal Cell Carcinoma of 4cms and above, after excision can be repaired with split or full thickness skin grafts, both grafts and flaps or flaps alone. Very large lesions and when bones are invaded, are to be managed by radiotherapy.

The purpose of this study was to find out the best

option for treatment i.e. Surgery or Radiotherapy and to evaluate and compare the results of different surgical procedures.

METHODOLOGY

All patients with basal cell carcinoma (n=333) admitted in Plastic Surgery Ward at Liaquat University Hospital, Jamshoro were included in this retrospective study. Cases were collected from May 1980 till December 2001.

Extra facial basal cell carcinomas were seen at four sites viz; chest, scalp, perineum and neck. One case each (n=4) and were excluded from the study.

Selection Criteria

All patients (n=333) admitted were divided into groups.

Group-I included 209 (62.76%) operated cases.

Group-II had 98 (29.42%) patients who were referred for radiotherapy.

Group-III included those patients who were admitted for surgery or radiotherapy but they left against medical advise and hence did not get any treatment. There were 26 (7.80%) such patients. They were excluded from this study.

Therefore, we concentrated on the patients (n=307) who had undergone surgery in our ward or had

undergone radiotherapy. Biopsy was done in every case. Excisional biopsy was done for small lesions in 20/307 (6.51%) cases while incisional biopsy was performed in 287/307 (93.48%) cases. Biopsy reports were collected in all cases (Table-I).

TABLE-I SHOWING BIOPSY FINDINGS

Biopsy	No. of Cases	(%)
Basal cell carcinoma	284	92.50
Pseudoepitheliomatous		
Hyperplasia	08	2.81
Non-specific	12	3.90
Squamous cell carcinoma	03	0.97
Total	307	100

The operated group was further divided into groups according to size, site and depth of involvement.

Group-I (Less than 1cm size).

Forty one (19.61%), out of 209 cases had small size BCC which were excised under local anaesthesia. Wound was closed with proline 5/0. These patients were discharged on same day and sutures were removed on 5th post-operative day.

Group-II (A) (1-4cm size BCC).

Ninety four (44.97%) patients out of 209 who had 1-4cm size BCC, which were excised and resultant defect was closed with some local flaps like, nasolabial flap, fore-head flap, glabellar advancement flap, V.Y- advancement of island flap, limberg flap, duoformental flap, cheek advancement flap, flap from upper lid and dorsal nasal flap.

Group-II (B) (Lesions of upto 4cm)

This group confined to one aesthetic zone and patients were medically fit.

In forty (19.13%) cases out of 209, the resultant defect after excision was covered with full thickness skin graft. Donor area was post auricular region in 32 (80%) cases while in 8 (20%) patients donor area was selected from inguinal region.

Group-II (C) (Lesions of upto 4cm).

In this BCC was confined to one or two aesthetic zones and patients were medically compromised. In 13 (6.22%) patients after excision, the defect was covered with split thickness skin graft.

Group-II (D)

Local flaps along with full thickness grafts were done in 21 (10.04%) of 209 cases. This combined procedure was used when basal cell carcinoma was involving two aesthetic zones of face, for example, nose and cheek or lip and cheek or lid.

Group-III

Large basal cell carcinomas which had eroded bone or mucosa and were found inoperable were sent to

Atomic Energy Medical Centre for Radiotherapy. Total 98 patients of 307 (31.92%) were managed by this method. Sixty eight (30.61%) patients were male (69.38%) and 30 patients were female.

RESULTS

Three hundred and thirty three patients with basal cell carcinoma were admitted in our ward during study period of which 202 (60.66%) were males while 131 (39.33%) were females (Table-II).

TABLE-II SHOWING GROUP WISE SEX DISTRIBUTION

Group	Sex	No. of cases	(%)
Group-I	Male	29	38.73
	Female	80	24.02
Group-II	Male	58	17.21
	Female	40	12.01
Group-III	Male	15	4.50
	Female	11	3.30

Preponderance of age group is listed in Table- III.

TABLE-III SHOWING AGE DISTRIBUTION
Total operated cases were 209

Age Group	Group-I	Group-II	Total	(%)
10-20 years	02	01	03	0.97
21-30 years	09	06	15	4.88
31-40 years	19	16	35	11.4
41-50 years	47	15	63	20.5
51-60 years	81	17	98	31.92
61-70 years	51	43	94	30.61
Total	209	89	307	100

In surgical group commonest sites are listed below in Table IV.

TABLE-IV SHOWING NUMBER OF CASES IN ORDER OF FREQUENCY IN SURGICAL GROUP

Site of involvement	Frequency
Nose	89
Cheek	50
Around orbit, upper lids, lower lids & inner canthus of eye	46
Forehead	19
Chin and neck	05
Total	209

Out of 13 patients who underwent S.S.G., 2 patients developed partial skin graft loss and two patients had

complete loss of graft 15.38% each. Full thickness grafting done 61 (Group III-A and Group-IV) partial loss of graft was seen in 10%, complete graft rejection seen in 6.66% while epidermal loss was present in 5% patients (Table-V).

TABLE-V COMPLICATIONS OF SURGICAL PROCEDURES

Surgical procedure	Partial (%)	Complete (%)	Epidermal Loss (%)
Split skin graft (n=13)	2 (15.38)	2 (15.38)	-
Full thickness graft (n=40+21)	6 (9.83)	4 (6.55)	3 (4.91)
Local Flap (n=5)	2 (2.04)	3 (3.06)	-

Complete or partial loss of flap was noted in 5 (5.10%) cases out of 94. Complete flap loss was seen in 3 (3.06%) patients while partial flap loss in 2 (2.04%) patients. Infection was noted in 16 (7.65%) cases out of 209 operated cases. Meanwhile ectropion of lower lid was seen in 2/21 (9.52%) cases.

DISCUSSION

This study was conducted to stress upon the various methods used and the value of surgery in the treatment of Basal Cell Carcinoma. This series of basal cell carcinoma comprises of 333 cases with 202 males and 131 females. The sex incidence in our series was 1.5:1, which partially correlates well with the world wide incidence with the males being affected twice as compared to females.(McKinney and Robinson, 1988).⁸

In this series 209 BCC's were found on the face with only 04 BCC's occupying extrafacial regions. In another study 93% BCC's were found on the Head and Neck, while 7% were found on the trunk and extremities. Emmett (1982) reported a series of 1411 cases of Basal cell carcinoma treated with surgical excision and plastic surgery repair. The commonest site in this study was head and neck in 75.5% cases.

In our study Basal cell carcinoma was more common in farmers than in urban population which does not coincide with the study of Saari-K.M. Paavilainen where urban and rural population are equally affected. The mode of treatment of basal cell carcinoma is changing world wide. In Queensland Radium institute, Royal Brisbane Hospital, Australia, from mid 1950 to mid 1960 about 5000 cases were treated by radiotherapy. However by 1985, the figures decreased to only 100 cases per year though the population of Brisbane has doubled (Kearnsly 1987). This can be compared with our study where out of

333 cases in more than twenty years, 98 cases were treated by radiotherapy and 209 by surgery. Thus, the number of cases treated by radiotherapy is decreasing day by day. This number had swelled in 1980 and early 1990's but since 1994 only non-operative cases are referred for radiotherapy. Hence in this changing scenario, the treatment of basal cell carcinoma has changed drastically from radiotherapy to surgery as the field of reconstructive surgery is advancing so rapidly.

We have tried in this paper to show and present various methods of reconstruction after excising the basal cell carcinoma. We conclude that local flaps are better option for Reconstruction after excising the basal cell carcinoma than free grafts. This facts is proved by other studies.

CONCLUSION

This study found that males are affected more than females with basal cell carcinoma with a male to female ratio of 1.5:1. The commonest age group for BCC is between 50 to 70 years of age.

Xeroderma pigmentosa was seen in 3.90% patients in early age group (between 10 to 30 years) indicating BCC in early age is due to pre-existing malignant condition.

Ultra-violet radiation exposed persons and patients with positive family history are more affected. It indicates genetic predisposition and exposure to Ultra-violet radiation are key risk factors not only in South European population but also in our community.^{12,13}

Two out of 12 patients of xeroderma pigmentosa had biopsy report of squamous cell carcinoma.

In our study, BCC was more common in farmers i.e. rural population.

Nose was commonest site in our study. Local flaps give excellent result on face regarding colour and texture match as compared to full thickness and split thickness skin grafts. Direct or primary closure also had excellent results after excision of upto 1cm size lesions of BCC. Full thickness graft (FTG) was much better than split thickness graft on face. Post auricular region as donor area for FTG was superior than other regions regarding colour match. Graft loss was the commonest complication. Flap necrosis was a notorious complication in local flaps. Biopsy report in 93% of patients coincided with the clinical diagnosis.

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